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UNITED STATES DEPARTMENT OF AGRICULTURE
 AGRICULTURAL RESEARCH ADMINISTRATION
 Bureau of Animal Industry
 Animal Husbandry Division
 Beltsville, Maryland

Karakul Sheep Investigations for Lambskin Fur Improvement
 and Associated Problems in the Wool and Meat of Karakul Sheep

by

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Mr. President and members of the Karakul Fur Sheep Registry, I appreciate this privilege of meeting with you again this year.

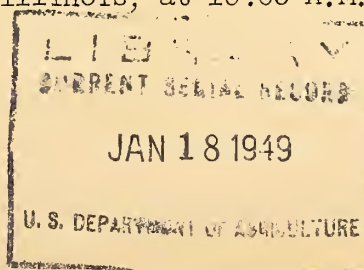
In order to illustrate some of our methods of measuring the results of the Karakul Sheep Investigations of the Bureau of Animal Industry, I have brought along 24 lambskins to show you. These include 10 skins that represent the various degrees of desirability in what we call grades from M-1 to M-10, inclusive. The letter "M" signifies medium-sized curl. The grade M-1 means the best grade in the medium-sized curl, and M-10 means the poorest grade in medium-sized curl. The other intermediate grades are M-2, M-3, M-4, M-5, M-6, M-7, M-8, and M-9, in the order of the grade numbers -- the lower the number, the better the grade.

The four pattern types here shown are the ribbed, lyre, mixed, and pine tree.

The 10 curl types in this exhibit are the pencil, mixed, mirror, feather, open, wave, sickle, flat, corkscrew, and nubby.

All these 24 skins were produced by the Bureau of Animal Industry at Beltsville, Maryland. They show the desirability grade, pattern type, and curl types we encounter in the Bureau's experimental flock of Karakul sheep and each lamb born in this flock is recorded for its fur characteristics in terms of this research schedule. While this schedule covers some of the more essential items of the records kept for each lamb, it is only part of the entire research schedule for them.

*Review presented at the annual meeting of the Karakul Fur Sheep Registry in the Stevens Hotel, Chicago, Illinois, at 10:00 A.M., December 3, 1948.



The complete schedule of all the records kept for each lamb includes lamb number, sire, dam, date of birth, weight at birth, sex, presence or absence of horns, wattles, color, pattern of coat or pelt, curl with respect to size, tightness, and type, luster, pattern, quality, fineness, density, renitence (resilience or rebound), and measurements of body length, chest depth and width, hair length, compressibility and rebound, and thickness of skin on the ears. Market analyses are also obtained and each skin is photographed before and after dressing, and each new-born lamb retained for breeding is photographed.

All these records are for analysis of the effects of inheritance and environment, and the relationships of these various characteristics. Out of such analyses we hope to reveal useful facts that will enable Karakul sheepmen to effectively control the breeding and management of their sheep for the production of better and still better lambskin fur. These research methods are necessarily complex, but through the analysis of the results, we hope to find opportunity to reduce to simplified form practical procedures for Karakul sheep producers.

The Bureau's experimental flock of Karakul sheep and lambs for this research work now totals 146, of which 9 are rams, and 137 are ewes and ewe lambs. Of these 146 sheep, 48 are purebred Karakuls. The other 98 are top-cross Karakuls, of which 31 are from a foundation of Blackface-Highland ewes, 35 are from a Corriedale ewe foundation, and 32 are from an old type Navajo ewe foundation. These 98 top-cross Karakuls average 92 percent pure Karakul, and of them the 31 that have been bred up from the foundation of Blackface-Highland ewes average 98 percent pure Karakul, 35 bred up from the Corriedale ewe foundation average 97 percent pure Karakul, and the 32 bred up from the foundation of old type Navajo ewes average 81 percent pure Karakul. Of all the 98 top-cross Karakuls, the individual sheep having the lowest percentage of Karakul inheritance are 75 percent Karakul, and the individual sheep having the highest percentage of Karakul inheritance are 99.61 percent Karakul.

The experiment at Beltsville on the influence of nutritional differences on the quality of lambskins produced by Karakul ewes is being continued for the third winter feeding period. A year ago at your annual meeting here I reported that the results of the first year showed no significant influence of nutrition on such factors of lambskin fur production as (a) size of lamb or pelt, (b) length of gestation period, (c) size of curl, (d) tightness of curl, (e) luster, (f) pattern, (g) general desirability, (h) length of lambs fur fiber, and (i) thickness of the skin of lambs. Since that time, the results of the second winter feeding period have been obtained and they are in agreement with those of the first year. When we have the results of this third year, if they also agree with the results of the first two years, we plan to report in one document the detailed findings of this nutrition experiment. If it is really true that the environmental factor of nutrition as it occurs in normal production has no significant influence on the quality of the fur, it will be an advantage to breeders who are striving to improve Karakul sheep for fur. We continue to find the genetic influence of sires definitely significant for birth weight, size of curl, tightness or compactness of curl, luster, and general desirability of the fur.

Your officers and directors of this Karakul Fur Sheep Registry have been very helpful to the Bureau of Animal Industry with intelligent and effective suggestions concerning the needs of the Karakul sheep enterprise. They have counselled on the important factors that are fundamental to the economic success of this phase of livestock production. We of the Bureau of Animal Industry would have the members of this Registry know that such helpful suggestions are not only appreciated, but they are seriously under consideration in the development of the future program of research for Karakul sheep.

Among these suggestions are proposals for studies of relationships of various characteristics of the sheep to successful fur production; investigations of the possibilities of profitable meat production with sheep and lambs of the Karakul flocks that are of low values for fur production; and research in the field of finding profitable uses for Karakul wool.

As a result of a diligent study of the vital needs of Karakul sheep that has been pursued by your officers and directors during the past year, your President, Mr. Hagerman, has presented the Bureau of Animal Industry with a comprehensive document that is an excellent reference for use in the development of an effective program for Karakul sheep research. Many of the problems mentioned in that document will require at least several years to solve, but a goodly portion of them are of such a nature as to yield results for useful application quite promptly in the practical operations of Karakul sheep producers.

Facilities for vigorous programs of research are being developed by Bureau of Animal Industry in the field of sheep husbandry, and in the technology of their fur, wool, and meat. The investigations of Karakul sheep and their products are included in this program.

